

Small Modular Reactors in Andaman & Nicobar Islands

Prelims: Current events of national and international importance | Geography | Science & Technology

Why in News?

Recently, Scientists from BARC are evaluating potential locations in the Andaman and Nicobar Islands for the establishment of Small Modular Reactors (SMRs).

- **Site assessment** - It is being conducted across **all three districts** of the Union Territory.
- The proposal arises in the context of:
 - Increasing electricity demand
 - Expansion of strategic infrastructure
 - The growing maritime significance of **Great Nicobar**
 - The increasing Chinese presence in the **Indian Ocean Region (IOR)**
- **Factors contributing to the rising power**
- **Infrastructural project development** - The Great Nicobar Project encompasses the following components:
 - Development of an International Container Transshipment Terminal (ICTT)
 - § Proposed location: Galathea Bay
 - § Planned capacity: 14.2 million twenty-foot equivalent units (TEU)
 - Construction of a greenfield international airport
 - Development of a new township
 - Establishment of power infrastructure
 - Implementation of other associated infrastructure

THE GREAT NICOBAR PROJECT

KEY COMPONENTS

Building a Sustainable and Strategic Future for Great Nicobar

1 International Container Transshipment Terminal (ICTT)  Proposed location: Galathea Bay Planned capacity: 14.2 million twenty-foot equivalent units (TEU)	2 Greenfield International Airport 	3 New Township 	4 Power Infrastructure 	5 Other Associated Infrastructure 
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SIGNIFICANCE OF RELIABLE ELECTRICITY SUPPLY

These projects necessitate a reliable electricity supply to support the following functions:

					
Port operations	Airport operations	Urban infrastructure	Communication systems	Defence infrastructure	Industrial/ logistics activities

A Stronger, Greener Great Nicobar

PEOPLE | PROGRESS | PROSPERITY
ISLANDS FOR A BRIGHTER TOMORROW

- **Strategic Importance** - It is situated near critical maritime routes that connect the Indian Ocean to Southeast Asia.
- This location holds significance for several strategic domains such as trade, maritime security, defense, energy security, and regional connectivity.
- **Strategic Advantages**
 - Enhances India's strategic presence in the eastern Indian Ocean.
 - Facilitates monitoring of critical maritime routes.
 - Supports the broader maritime security architecture of India.
 - Offers strategic proximity to the approaches of the Strait of Malacca.
 - Enhances India's capacity to respond to developments in the eastern Indian Ocean.

- INS Baaz functions as a naval air station, commissioned in **2012**.
- It is recognized as India's **southernmost air station**.
- Situated at – **Campbell Bay on Great Nicobar Island**.
- The location provides India with strategic advantages for monitoring maritime approaches near the **Six Degree Channel and the Strait of Malacca**.

Andaman & Nicobar Command (ANC)

- It is the **only tri-services command in India**.
- Situated in the **Andaman and Nicobar Islands**.
- The command integrates the following services:
 - Indian Army
 - Indian Navy
 - Indian Air Force
 - Indian Coast Guard elements
- **Strategic Significance**
 - Facilitates maritime surveillance.
 - Ensures the protection of India's maritime interests.
 - Maintains a strategic presence in the eastern Indian Ocean.
 - Monitors critical sea lanes.
 - Provides defense for the island territories.

Bhabha Atomic Research Centre (BARC)

- BARC is recognized as India's leading nuclear research institution.
- Located at **Trombay, Mumbai**.
- Functions under the **Department of Atomic Energy (DAE)**.
- Associated with:
 - Nuclear science
 - Nuclear technology
 - Reactor research
 - Nuclear applications
 - Radioisotope applications

- **Small Modular Reactors (SMRs)** – These are nuclear reactors characterized by a lower power output compared to conventional large-scale nuclear reactors.
- These reactors are designed to be:
 - Smaller in physical size,
 - Modular in design,
 - Potentially manufactured in factories, and
 - Easier to deploy in regions with limited electrical grid infrastructure.

SMALL MODULAR REACTORS (SMRs)

ADVANTAGES FOR ISLANDS

Feature	Advantage for Islands
 Smaller size	 Easier to deploy than large reactors
 Modular design	 Capacity can potentially be expanded in stages
 Reliable baseload power	 Useful where renewable power is intermittent
 Low operational carbon emissions	 Supports low-carbon development
 Independent power source	 Reduces dependence on transported diesel/fossil fuels
 Suitable for isolated grids	 Important for geographically remote islands

*Clean Energy for
Stronger Island Communities*

Reference

[Economic Times | SMR in Andaman & Nicobar Islands](#)